



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|----------------------------|------------------------|
| 10/677,291 | 10/03/2003 | Kouji Harada | 056208.52811US | 9636 |
| 23911 7590 07/02/2007 CROWELL & MORING LLP INTELLECTUAL PROPERTY GROUP P.O. BOX 14300 WASHINGTON, DC 20044-4300 | | | EXAMINER KERNS, KEVIN P | |
| | | | ART UNIT 1725 | PAPER NUMBER |
| | | | MAIL DATE 07/02/2007 | DELIVERY MODE PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/677,291

Applicant(s)

HARADA, KOUJI

Examiner

Kevin P. Kerns

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-10 and 21-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-10 and 21-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 7/26/06.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 7-10 and 21-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2001-54268 in view of JP 11-120743.

JP 2001-54268 teaches a mechanical apparatus comprising an integrated bonded body comprising rotary disks and a rotary shaft press fitted together wherein an annular groove is provided at the fitting portion (figures 1, 5, 6, 9-12; and abstract). Although JP 2001-54268 does not teach bonding marks that remain on the integrated bonded body, these appear to be part of the forming method. JP 2001-54268 does not specifically disclose that both preliminary and plastic bonding marks remain on the integrated bonded body.

However, JP 11-120743 discloses a method for bonding a spindle shaft and a hub of a disk drive device to form an integrated bonded body, in which the hub 1 and spindle shaft are bonded to become integrated via plastic flow, such that the spindle shaft includes a groove or projection (first bonding mark) in a circumferential or axial direction, and a helical groove or projection (second bonding mark) on the outer periphery of the spindle shaft (see embodiments of Figures 7-12), such that these

Art Unit: 1725

grooves/projections that remain on the integrated bonded body are advantageous for facilitating bonding between the hub and spindle shaft (abstract; and Figures 7-12).

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to modify the integrated bonded body disclosed by JP 2001-54268, by using the first and second bonding marks that remain on the integrated bonded body, as taught by JP 11-120743, in order to facilitate bonding between the hub and spindle shaft (JP 11-120743; abstract).

3. Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tatsumi et al. (US 4,377,762) in view of JP 11-120743.

Tatsumi et al. teach a mechanical apparatus comprising a bonded body comprising rotary disks and a rotary shaft press fitted together wherein an annular groove is provided at the fitting portion (figures 1-4 and 11-15; col 3 lines 21-68; and col 5 line 49 – col 6 line 24). Although Tatsumi et al. do not teach bonding marks that remain on the bonded body, these appear to be part of the forming method. Tatsumi et al. do not specifically disclose that both preliminary and plastic bonding marks remain on the bonded body.

However, JP 11-120743 discloses a method for bonding a spindle shaft and a hub of a disk drive device to form an integrated bonded body, in which the hub 1 and spindle shaft are bonded to become integrated via plastic flow, such that the spindle shaft includes a groove or projection (first bonding mark) in a circumferential or axial direction, and a helical groove or projection (second bonding mark) on the outer

Art Unit: 1725

periphery of the spindle shaft (see embodiments of Figures 7-12), such that these grooves/projections that remain on the integrated bonded body are advantageous for facilitating bonding between the hub and spindle shaft (abstract; and Figures 7-12).

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to modify the bonded body disclosed by Tatsumi et al., by using the first and second bonding marks that remain on the integrated bonded body, as taught by JP 11-120743, in order to facilitate bonding between the hub and spindle shaft (JP 11-120743; abstract).

Response to Arguments

4. The examiner acknowledges the applicant's amendment received by the USPTO on March 13, 2007. In addition, the Information Disclosure Statement (IDS) of July 26, 2006 has been initialed (copy of the IDS in a prior Office Action had omitted initials adjacent one of the references), and a corrected initialed copy of the IDS is provided with this Office Action. The amendments to independent claims 7, 10, 21, 29, and 30 overcome prior double patenting rejections and prior 35 USC 102(b) rejections. However, both of the prior 35 USC 102(b) references remain as primary references in the 35 USC 103(a) rejections, as now set forth in above sections 2 and 3. Claims 7-10 and 21-30 remain under consideration in the application.

5. Applicant's arguments with respect to claims 7-10 and 21-30 have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 1725

With regard to the applicant's remarks/arguments on pages 8 and 9 of the amendment, the applicant presents arguments that are chiefly directed toward method claims as follows: "the plastic bonding is carried out in one step" (3rd line on page 9 of the remarks), "does not disclose two step plastic flow bonding" (3rd full paragraph on page 9), and "a preliminary bonding step" (3rd full paragraph on page 9). It is noted that all claims are directed to a bonded body (product made by a process), and that JP 11-120743 discloses first and second bonding marks that remain on the bonded body. As a result, (product) claims 7-10 and 21-30 remain rejected in view of these features.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kevin P. Kerns whose telephone number is (571) 272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jonathan Johnson can be reached on (571) 272-1177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin P. Kerns *Kevin Kerns 6/26/07*
Primary Examiner
Art Unit 1725

KPK
kpk
June 26, 2007